PATENT APPLICATION

RESPONSE UNDER 37 CFR §1.116
EXPEDITED PROCEDURE
TECHNOLOGY CENTER ART UNIT 2837

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Taketo TAKEUCHI   Group Art Unit: 2837

Application No.:   10/559,870   Examiner: R. MCCLOUD

Filed: December 7, 2005   Docket No.:   125195

For: CONTROL DEVICE FOR A VEHICLE MOTOR

REQUEST FOR RECONSIDERATION AFTER FINAL REJECTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the April 10, 2008 Office Action, and after entry of the attached Petition

for Extension of Time, reconsideration of the above-identified application is respectfully

requested in light of the following remarks. Claims 1-16 are pending in this application.

Claims 1-16 were rejected under 35 U.S.C. §103(a) over Matsunaga et al.

(Matsunaga), U.S. Patent No. 6,114,828, in view of Shimazaki et al. (Shimazaki), U.S.

Publication No. 2002/0116100. The rejection is respectfully traversed.

Claims 1 and 9 call for the torque of the vehicle motor to be reduced when the stalled

state of the vehicle is detected and when a selected temperature exceeds a restrictive

temperature (with the selected temperature being from a coil of the plurality of coils where a

maximum current flow is detected).

Applicant maintains the arguments presented in the preceding responses. Applicant herein addresses the newly presented comments on pages 3 and 4 of the Office Action.

Pages 3 and 4 of the Office Action allege that Applicant's arguments filed December 21, 2007 improperly attack the references individually. Applicant disagrees because, taken as a whole, Matsunaga and Shimazaki fail to disclose or suggest reducing the torque of the vehicle motor <u>when a selected temperature exceeds a restrictive temperature</u> (with the selected temperature being from a coil of the plurality of coils where a maximum current flow is detected) as called for by claims 1 and 9.

Matsunaga reduces torque if the motor does not rotate (that is, if the phase domain is the same) (col. 6, lines 22-54 and Fig. 2B, steps S33 and S37) and Shimazaki simply states that the drive current of the motor is reduced if the stalled state is determined based on the accelerator opening and the rotational speed of the motor. Taken as a whole, if Matsunaga were to be combined with Shimazaki (which Applicant does <u>not</u> admit would have been obvious), then the torque of the motor would be reduced when the motor does not rotate (as discussed by Matsunaga) and/or based on the accelerator opening and the rotational speed (as discussed by Shimazaki). Therefore, taken as a whole, Matsunaga and Shimazaki when combined fail to disclose or suggest using the parameter of a selected temperature that exceeds a restrictive temperature in order to reduce the torque of the vehicle motor as called for by claims 1 and 9.

Page 3 of the Office Action asserts that "Matsunaga discloses that the motor is stopped because it is in a locked state (Col. 2:8-33, col. 4:8-21) due to overheating (col. 6:49-55)." Applicant asserts that this assertion is not on point with Applicant's previous argument and reflects a misunderstanding of Matsunaga.

Matsunaga's col. 4, line 50 - col. 5, line 5 discusses how a locked state of the motor 5 is determined. Matsunaga fails to state that the motor is stopped because it is in a locked state

due to overheating. Matsunaga instead attempts to avoid overheating (col. 6, lines 49-55 discusses the advantage of Matsunaga's invention). As previously discussed, Matsunaga determines if the phase domain is the same in order to determine whether the output torque of the motor 5 should be reduced in order to <u>avoid</u> overheating (col. 6, lines 27-59).

Regardless of the point to be made, even if Matsunaga disclosed that the motor is stopped because it is in a locked state due to overheating (which Applicant asserts that Matsunaga fails to disclose), Matsunaga fails to disclose or suggest reducing the torque of the vehicle motor <u>when a selected temperature exceeds a restrictive temperature</u> as called for by claims 1 and 9. As clearly illustrated by Matsunaga's Fig. 2B, Matsunaga reduces the output torque (S33 and S37) only if the limitation torque is less than the motor torque demand instruction value (S29:YES) and the phase domain is the same (S31:Yes). Matsunaga fails to consider determining if a selected temperature exceeds a restrictive temperature as called for by claims 1 and 9.

Pages 3 and 4 of the Office Action asserts that "it is noted that the features upon which applicant relies (i.e., the motor is rotating) are not recited in the rejected claim(s)." Applicant asserts that the previous argument asserted has been misinterpreted. As previously argued, Shimazaki fails to disclose reducing torque using a selected temperature, as called for by claims 1 and 9, because Shimazaki states that the stalled state is determined (in order to determine whether the drive current of the motor should be reduced) based on the accelerator opening and the rotational speed of the motor. In other words, Shimazaki fails to disclose all of the features of claims 1 and 9 because Shimazaki discloses using another parameter (i.e., rotational speed). Applicant also asserts that all of the features relied upon are recited in claims 1 and 9.

Page 4 of the Office Action states that Shimazaki is being relied upon for the teaching that a maximum temperature comes from a maximum current. Applicant notes that

Shimazaki fails to explicitly disclose this feature at the cited paragraphs [0015] and [0016]. Applicant provides the following explanation in order to clarify maximum temperature and maximum current in order to explain why Shimazaki fails to suggest selecting a temperature from a coil of the plurality of coils where a maximum current flow is detected, as called for by claims 1 and 9.
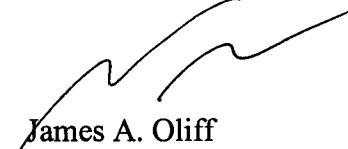
Decidedly, a maximum temperature becomes the temperature of a phase where a maximum current flows in a steady state. However, the current flows intensively into a phase when in the stalled state. As a result, the phase where a maximum current flows should move to a new phase at that moment when the current phase reaches a maximum temperature in order to avoid limiting the torque of the motor. The temperature of the new phase where the maximum current now flows has not become a maximum temperature yet (the previous phase is the phase that is at a higher temperature). Therefore, the phase of maximum temperature definitely differs from the phase where maximum current flows based on the change of the phase, which flows the current in a transient state. Because claims 1 and 9 use the temperature of the coil where a maximum current flows instead of the maximum temperature, a larger output torque can be attained. Shimazaki fails to discuss this concept or suggest using a selected temperature from a coil where a maximum current flow is detected as called for by claims 1 and 9.

It is respectfully requested that the rejection be withdrawn.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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JAO:SMS

Attachment:
    Petition for Extension of Time

Date: August 8, 2008

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